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(54) **WASTE BIN**

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(57) **ABSTRACT**

A waste bin, comprising a container (**1**) and also a cover (**3**) which can be moved between an opened positon and a closed position by means of a pivot mechanism, which pivot mechanism comprises at least one auxiliary arm (**4**) which at one end (**6**) is pivotably connected to the cover and at the other end (**7**) is pivotably suspended relative to the container, furthermore, a second auxiliary arm (**5**) is provided, whose one end (**8**) is likewise pivotably connected to the cover, and whose other end (**9**) is pivotably suspended relative to the container.

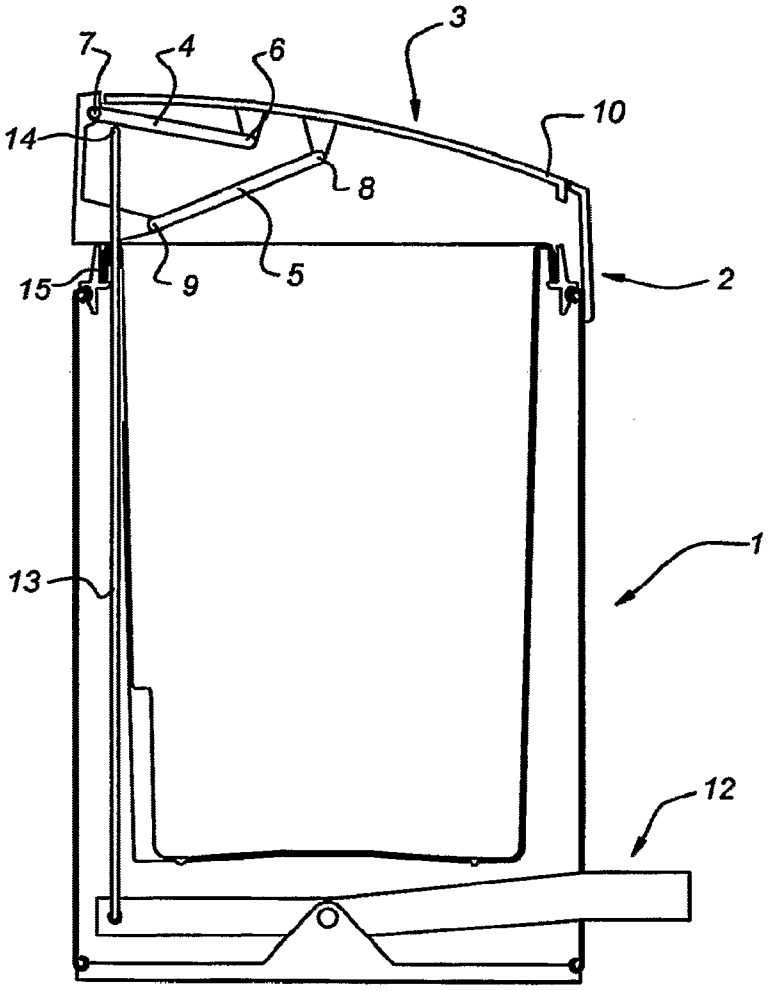


Fig 1

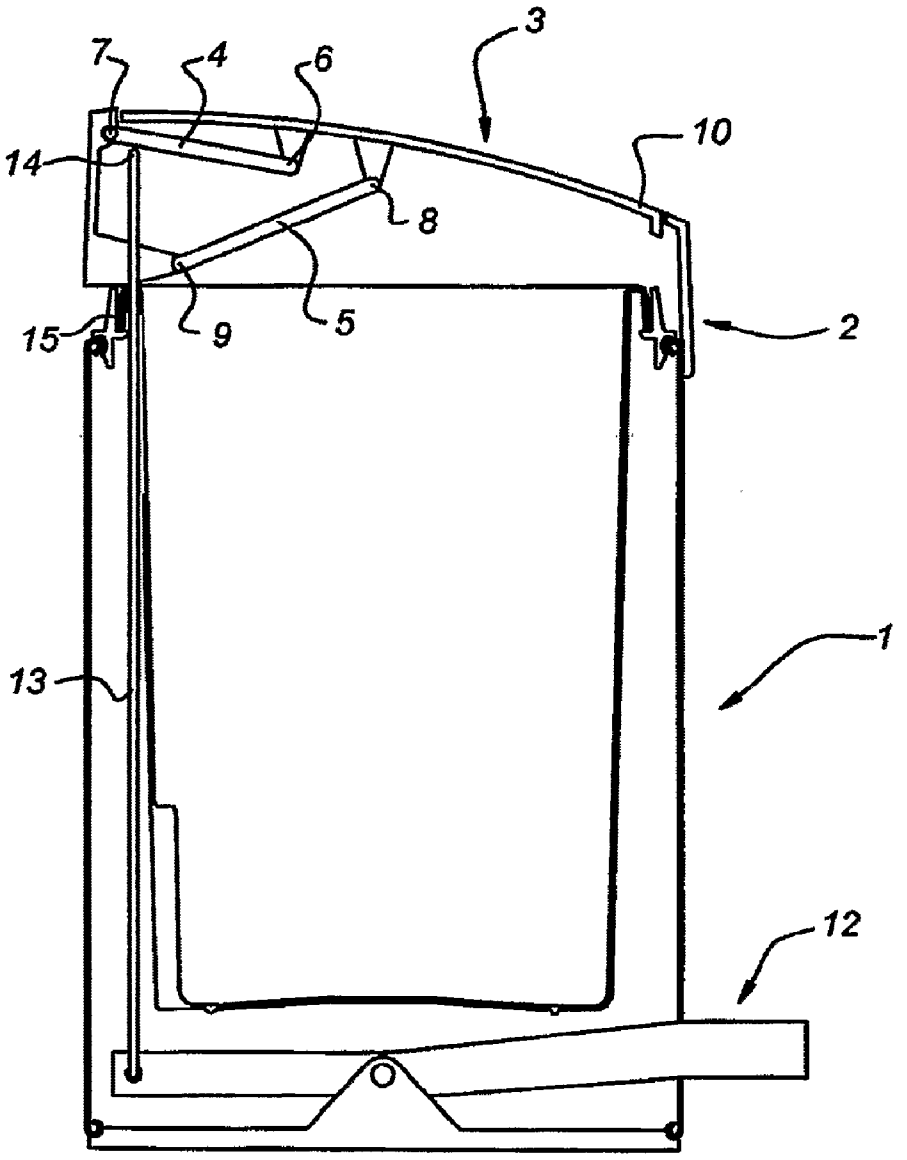


Fig 2

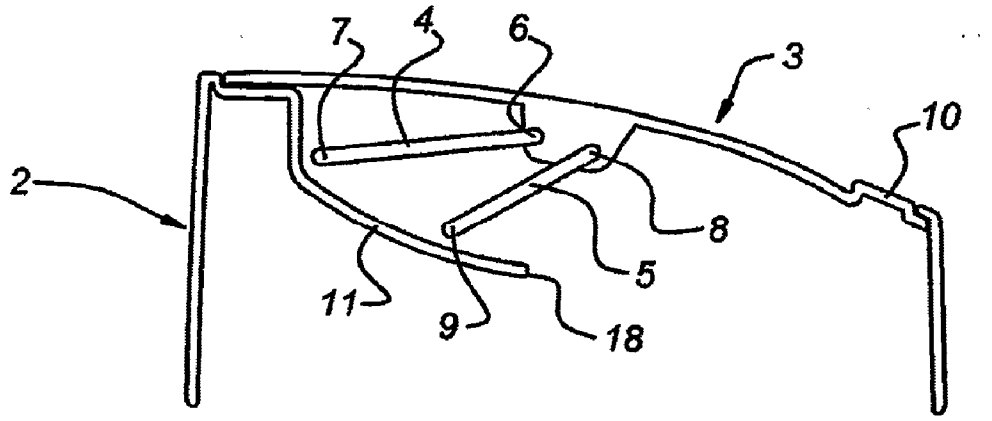
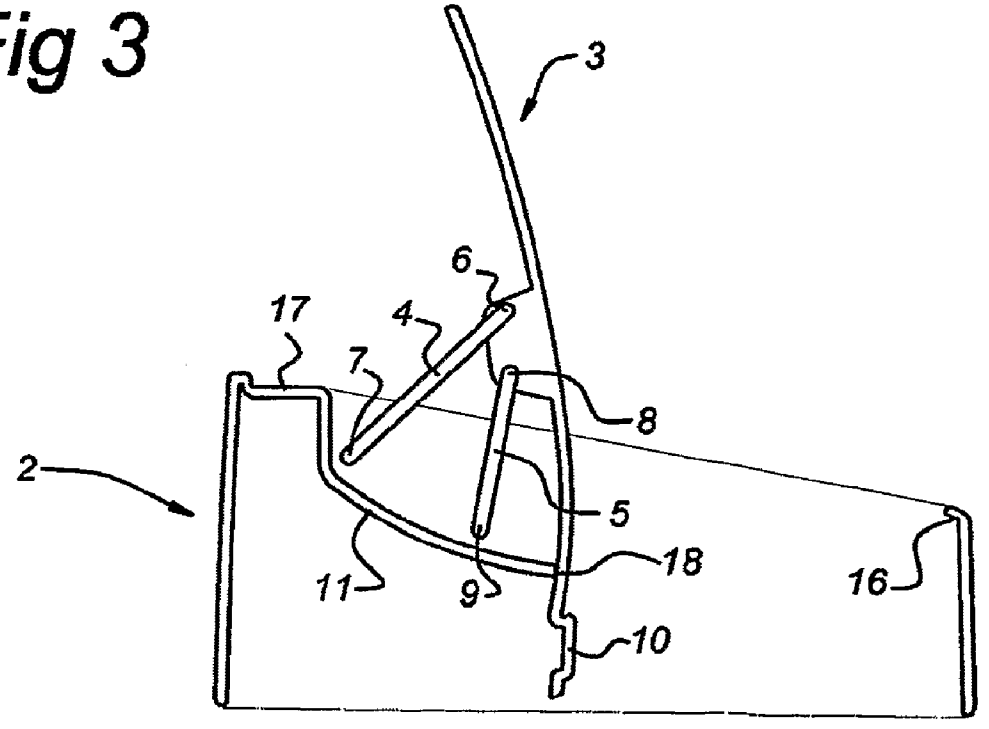


Fig 3



WASTE BIN

[0001] The invention relates to a waste bin, comprising a container and also a cover which can be moved between an opened position and a closed position by means of a pivot mechanism, which pivot mechanism comprises at least one auxiliary arm which at one end is pivotably connected to the cover by means of a first pivoted connection, and at the other end is pivotably suspended relative to the container by means of a first pivoted suspension.

[0002] Such a waste bin is disclosed in U.S. Pat. No. 6,206,231. This known waste bin has a cover which is pivotably connected to a plate, which in turn is pivotably suspended from an auxiliary collar, which itself is placed on a container. The plate is provided with a resilient lip, which holds the cover constantly pressed in a closed position. Pressing against the cover causes the latter to move downwards against the initial tension force exerted by the resilient lip. The cover then gives access to the container, so that waste can be thrown into it.

[0003] The disadvantage of such a waste bin is that when pressed open the cover projects to a relatively great depth into the container. For that reason, a fairly high auxiliary collar has to be used, but this leads to a relatively large amount of lost space which is not available for receiving waste. A second disadvantage is that the throw-in opening is relatively small as a result of the position of the pivoted suspension of the cover.

[0004] The object of the invention is to provide a waste bin of the abovementioned type, i.e. a waste bin in which the cover can be opened by pressing on it with the hand, which does not have these disadvantages. That object is achieved in that a second auxiliary arm is provided, one end of which auxiliary arm is pivotably connected to the cover by means of a second pivoted connection, and the other end of which auxiliary arm is pivotably suspended relative to the container by means of a second pivoted suspension.

[0005] In the waste bin according to the invention each pivot point of the cover is situated above said cover, in such a way that the latter can be opened by pressing on it with the hand. On the other hand, by a suitable choice of the position of the pivoted suspensions and pivoted connections, and of the dimensions of the auxiliary arms, it is possible to obtain such a path on opening of the cover that the latter does not extend unduly far down into the container. Furthermore, all the above can be designed in such a way that the opened cover can remain stably in the opened position. On the other hand, it can also be ensured that during closure the cover goes into a stable closed position. The cover here does not have just one pivot point, but has a series of pivot points or a track with pivot points.

[0006] A stop may be provided in each case for both the opened position and the closed position of the cover. The stop which determines the closed position relates to the position of a cover at rest. For the stop to determine a three-part opened position there are two possibilities. According to a first possibility, said stop can be provided in such a way that the cover can move beyond its "dead centre" or the unstable position. In that position the cover stays open. As an alternative, for the opened position a stop from which the cover always falls shut can be provided. In the case of such a stop the cover therefore cannot move beyond the "dead centre". In that connection, the length of the auxiliary arm whose pivoted suspension is situated at a higher level can also be greater than the length of the other auxiliary arm.

[0007] In an advantageous embodiment an auxiliary collar can be provided, which auxiliary collar is placed on the open end of the container and from which the auxiliary arms are pivotably suspended. In this case the pivoted suspension of the one auxiliary arm on the auxiliary collar can be situated at a higher level than the pivoted suspension of the other auxiliary arm on the auxiliary collar. It is also preferable for the pivoted connection of the auxiliary arm whose pivoted suspension on the auxiliary collar is situated at a higher level to be situated closer to said pivoted suspension than the pivoted connection of the auxiliary arm whose pivoted suspension on the auxiliary collar is situated at a lower level. In such an embodiment both a stable opened position and a stable closed position of the cover can be obtained.

[0008] As discussed above, the cover can in particular be opened by hand by pressing on it in the downward direction. As an alternative, or also as an addition, a pedal control can be provided, comprising a pressure rod whose top end acts upon one of the auxiliary arms between its pivoted connection and its pivoted suspension. In this case the pressure rod is preferably slidably guided in the longitudinal direction, preferably relative to the auxiliary collar. Furthermore, the free top end of the auxiliary rod can be pressed against the arm under the influence of pressure forces. This means that there is no need to provide a fixed pivoted connection between the pressure rod and the arm concerned. In this embodiment the pedal control remains passive when the cover is opened by hand.

[0009] The invention will be explained in greater detail below with reference to a number of exemplary embodiments shown in the figures.

[0010] FIG. **1** shows a section of a first embodiment of a waste bin according to the invention.

[0011] FIG. **2** shows a section of an auxiliary collar with cover of a second embodiment, in which the cover is in the closed position.

[0012] FIG. **3** shows a section corresponding to that of FIG. **2**, in which the cover is in the opened position.

[0013] The waste bin according to the invention shown in FIG. **1** has a container **1**, on which an auxiliary collar **2** is placed. The cover **3** is pivotably suspended in said auxiliary collar **2**. The cover **3** is connected to the auxiliary collar **2** by means of two auxiliary arms **4**, **5**. For this purpose, the auxiliary arm **4** is pivotably connected by means of the first pivoted connection **6** to the underside of the cover **3**, and is pivotably suspended by means of the first pivoted suspension **7** on the inside of the auxiliary collar **2**. Furthermore, the other auxiliary arm **5** is connected by means of the second pivoted connection **8** to the underside of the cover **3**, and is pivotably suspended by means of the second pivoted suspension **9** on the inside of the auxiliary collar **2**.

[0014] A certain desired path of the cover **3** when it is opened and closed respectively is now obtained by selecting the mutual positions of the pivoted connections **6**, **8** and of the pivoted suspensions **7**, **9**, and also by selecting the lengths of the auxiliary arms **4**, **5**. From the closed position shown in FIG. **1** the cover **3** can be opened by pressing on it with the hand near its front side **10**. The front side **10** then moves downwards slightly but, since the pivoted connections **6**, **8** move upwards, the total downward movement of the cover **3**

into the container **1** will be small. As a result of this, relatively little space for movement of the cover **3** is lost as space for receiving waste.

[0015] As discussed above, the cover **3** can be opened in particular by hand by pressing on the front side **10** of said cover. As an alternative, the cover **3** can, however, also be opened by means of the pedal control **12**. The latter has a pressure rod **13**, the top end of which is guided relative to the container **1** by means of the guide **15**. The top end **14** of the pressure rod **13** can therefore be pressed freely from below against the arm **4**, causing the cover **3** to open. If, however, the cover **3** is opened by pressing down its front side **10**, the pedal control **12** remains passive. This is made possible by the fact that the top end **14** of the pressure rod **13** is not permanently fixed to said arm **4**, but merely moves against it through pressure. If the cover **3** is now operated by hand, the arm **4** simply moves away from the pressure rod **13**, in such a way that the latter does not have to be moved along with it. The advantage of this is that opening the cover **3** by hand does not require much force, because the pedal control **12** does not have to move as well.

[0016] This movement path is shown in greater detail in the variant of FIGS. **2** and **3**. The pivoted suspensions **7**, **9** of the arms **4** and **5** are now positioned slightly differently and are situated on a dish **11** which forms an integral part of the auxiliary collar **2**. As shown in FIG. **3**, the front part **10** of the cover **3** has moved slightly downwards, but this movement is relatively limited because the pivoted suspension **6** and **8** have clearly moved upwards.

[0017] In the closed position the cover **3** rests against the stops **16** and **17**, and in the opened position rests against the stop **18**.

[0018] Although an embodiment in which the pivoted suspensions **7**, **9** are situated on the collar is discussed above, the invention is not limited to that embodiment. For instance, the pivoted suspensions can also be placed on the container itself. A further advantage of the waste bin according to the invention is that the swing mechanism, including the arms and the pivoted suspensions and the pivoted connections, are situated below the cover. Furthermore, these parts are situated within the collar, in such a way that they are concealed in the interior of the waste bin. On the one hand, a good external appearance is obtained as a result of this while, on the other hand, the swing mechanism is well protected.

1-21. (canceled)

22. A Waste bin, comprising:

a container and a cover which can be moved between an open position and a closed position by means of a pivot mechanism;

wherein the pivot mechanism comprises at least one auxiliary arm, including a first auxiliary arm, which at one end is pivotably connected to the cover by means of a first pivoted connection, and which at the other end is pivotably suspended relative to the container by means of a first pivoted suspension;

a second auxiliary arm, wherein one end of the second auxiliary arm is pivotably connected to the cover by means of a second pivoted connection and the other end of the second auxiliary arm is pivotably suspended relative to the container by means of a second pivoted suspension;

wherein the pivoted connections between the cover and the auxiliary arms are situated on the inside of the cover.

23. The Waste bin according to claim **22**, in which axes of the pivoted connections and pivoted suspensions of the two auxiliary arms are parallel to each other.

24. The Waste bin according to claim **22**, in which the pivoted suspension of the first auxiliary arm is situated at a higher level than the pivoted suspension of the second auxiliary arm.

25. The Waste bin according to claim **22**, in which the pivoted connection of the first auxiliary arm whose pivoted suspension is situated at a higher level is situated closer to said pivoted suspension than the pivoted connection of the second auxiliary arm whose pivoted suspension on the auxiliary collar is situated at a lower level.

26. The Waste bin according to claim **24**, in which a length of the auxiliary arm whose pivoted suspension is situated at a higher level is greater than a length of the other auxiliary arm.

27. The Waste bin according to claim **22**, in which a distance between the pivoted suspensions is greater than a distance between the pivoted connections.

28. The Waste bin according to claim **22**, in which the pivoted arms are each of a plate-shaped design.

29. The Waste bin according to claim **22**, in which a pedal control is provided, comprising a pressure rod whose top end acts upon one of the auxiliary arms between its pivoted connection and its pivoted suspension.

30. The Waste bin according to claim **29**, in which the pressure rod is slidably guided in a longitudinal direction and has a free top end which can be pressed against one of the auxiliary arms under the influence of pressure forces.

31. The Waste bin according to one of the preceding claims, in which positions of the pivoted connections and the pivoted suspensions are selected in such a way that from a first slanting position of the cover the cover closes under the influence of gravity.

32. The Waste bin according to one of the preceding claims, in which positions of the pivoted connections and the pivoted suspensions are selected in such a way that from a second slanting position of the cover the cover moves under the influence of gravity to the opened position.

33. The Waste bin according to claim **31**, in which the first slanting position lies relatively close to the closed position and the second slanting position lies relatively far away from the closed position, between which first slanting position and second slanting position an unstable position of the cover is determined.

34. The Waste bin according to one of claim **22**, in which positions of the pivoted connections and the pivoted suspensions are selected in such a way that from each slanting position of the cover the cover closes under the influence of gravity.

35. The Waste bin according to claim **22**, in which mutual positions of the pivoted connections and the pivoted suspensions are selected in such a way that a pivot point or a collection of pivot points of the cover are situated above said cover.

36. The Waste bin according to claim **22**, in which at least one stop for determining the closed position of the cover is provided.

37. The Waste bin according to claim **22**, in which a stop for determining the opened position of the cover is provided.

38. The Waste bin according to claim **22**, in which the auxiliary arms are situated below the cover in the closed position of the cover.

39. The Waste bin according to claim **22**, in which the pivoted suspensions are situated on a collar on an upper side of the container.

40. The Waste bin according to claim **39**, in which the pivoted suspensions are situated inside the collar.

41. The Waste bin according to claim **39**, in which the pivoted connections are situated inside the collar.

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